1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product name: GEOlube® 50 A 1000
Product code: 5008000
Synonyms: Polyalkylene glycol monobutyl ether

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use [RU]: Component: Lubricant, Metal working fluids
Uses advised against: None known

1.3 Details of the supplier of the safety data sheet

Supplier: GEO Specialty Chemicals UK Ltd
Charleston Road, Hardley, Hythe
Southampton, Hampshire SO45 3ZG
United Kingdom
Phone: +44 (0)23 80894666
Fax No: +44 (0)23 80243113

Responsibility Statement: For further information, please contact safety-data-sheet-fp@geosc.com

1.4 Emergency telephone number

Emergency telephone: 24 Hour Emergency Phone Number
GEO Specialty Chemicals UK Ltd
+44 (0)23 80891806

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Acute inhalation toxicity - dust/mist: Category 2

2.2 Label elements

Classification according to Regulation (EC) No. 1272/2008 [CLP]
Signal word  DANGER

**Hazard statements**
H330 - Fatal if inhaled

**Precautionary statements**
P271 - Use only outdoors or in a well-ventilated area
P260 - Do not breathe spray
P260 - Do not breathe mist
P260 - Do not breathe vapor
P284 - Wear respiratory protection
P310 - Immediately call a POISON CENTER or doctor/physician
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

**Hazard components for labeling** Oxirane, 2-methyl-,polymer with oxirane, monobutyl ether

### 2.3 Other information

None known

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1 Substances

<table>
<thead>
<tr>
<th>Component</th>
<th>EU EINECS</th>
<th>weight-%</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
<th>REACH Regulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxirane, 2-methyl-, polymer with oxirane, monobutyl ether 9038-95-3</td>
<td>Not applicable</td>
<td>&gt; 95%</td>
<td>Acute Tox. 2 (H330)</td>
<td>In compliance</td>
</tr>
</tbody>
</table>

For the full text of the H-Statements mentioned in this Section, see Section 16.

#### 3.2 Mixtures

Not applicable

### 4. FIRST AID MEASURES

#### 4.1 Description of first aid measures

**Eye contact**
Immediately flush with plenty of water for at least 15 minutes, holding eyelids apart to ensure flushing of the entire surface.

**Skin contact**
Wash off immediately with soap and plenty of water. Remove contaminated clothing and shoes.

**Ingestion**
Rinse mouth thoroughly with water. Drink plenty of water.

**Inhalation**
Remove to fresh air. Seek immediate medical attention.

#### 4.2 Most important symptoms and effects, both acute and delayed
Most important symptoms and effects
See Section 11 for more information.

4.3 Indication of any immediate medical attention and special treatment needed

Note to physicians
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Water spray, carbon dioxide (CO2), dry chemical, alcohol-resistant foam.

Extinguishing media which must not be used for safety reasons
High pressure waterjet

5.2 Special hazards arising from the substance or mixture

Special Hazard
Thermal decomposition can lead to release of irritating and toxic gases and vapors.

5.3 Advice for firefighters

Special protective equipment for firefighters
Full protective clothing and approved self-contained breathing apparatus required for firefighting personnel.

Firefighting measures
Cool exposed containers with water spray after extinguishing fire.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions
Wear suitable protective clothing and gloves. Wear self-contained breathing apparatus.

6.2 Environmental precautions

Environmental precautions
Do not empty into drains/surface water/ground water. Prevent fire extinguishing water from contaminating surface water or the ground water system. Retain contaminated washing water and dispose it.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up
Prevent further leakage or spillage if safe to do so. Clear spills immediately.
Small spill : Soak up with inert absorbent material. Dispose of according to regulations.
Large spill: Use mechanical means such as pumps and absorbent materials.

6.4 Reference to other sections

See Section 12 for additional Ecological Information
7. HANDLING AND STORAGE

7.1 Precautions for safe handling

   Advice on safe handling
   Handle and open container with care
   Use only in well-ventilated areas
   Take precautionary measures against static discharges
   Avoid generation of aerosols/mist

7.2 Conditions for safe storage, including any incompatibilities

   Technical measures and storage conditions
   Do not store together with oxidants.
   Do not store together with reductants.
   Keep away from heat
   Protect from direct sunlight
   Keep container tightly closed in a cool place
   Keep only in the original container

7.3 Specific end use(s)

   Specific use(s)
   Not applicable

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

   Occupational exposure limit value

<table>
<thead>
<tr>
<th>Component</th>
<th>European Union</th>
<th>United Kingdom</th>
<th>Spain</th>
<th>Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxirane, 2-methyl-, polymer with oxirane, monobutyl ether 9038-95-3</td>
<td>NAV</td>
<td>NAV</td>
<td>NAV</td>
<td>NAV</td>
</tr>
</tbody>
</table>

   Biological limit values

<table>
<thead>
<tr>
<th>Component</th>
<th>European Union</th>
<th>United Kingdom</th>
<th>Spain</th>
<th>Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxirane, 2-methyl-, polymer with oxirane, monobutyl ether 9038-95-3</td>
<td>NAV</td>
<td>NAV</td>
<td>NAV</td>
<td>NAV</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

   Personal Protective Equipment

   Eye/face Protection
   Wear safety glasses with side shields (or goggles).

   Hand Protection
   Appropriate chemical resistant gloves should be worn. Nitrile gloves. Coating thickness 0.4 mm. Level 6 > 480 min breakthrough time.

   Skin and body protection
   Wear suitable protective clothing.

   Respiratory protection
   When processing in open systems with aerosol formation wear suitable respiratory protection to avoid inhalation of aerosol particles.
Other personal protection data
Eyewash fountains and safety showers must be easily accessible.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls
No information available.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>liquid</td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>colorless</td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>clear</td>
<td></td>
</tr>
<tr>
<td>Odor</td>
<td>slight odor</td>
<td></td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>5.0 - 7.5</td>
<td></td>
</tr>
<tr>
<td>Melting / freezing point</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Boiling point / boiling range</td>
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<td></td>
</tr>
<tr>
<td>Flash point</td>
<td>&gt; 216.0 °C / &gt; 420.8 °F</td>
<td>ASTM D92</td>
</tr>
<tr>
<td>Evaporation rate</td>
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<td></td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not flammable</td>
<td></td>
</tr>
<tr>
<td>Flammability Limit in Air</td>
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<td></td>
</tr>
<tr>
<td>Upper flammability limit</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Lower flammability limit</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>&lt; 0.001 mm Hg @ 20 °C</td>
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</tr>
<tr>
<td>Vapor density</td>
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<td></td>
</tr>
<tr>
<td>Specific gravity</td>
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<td></td>
</tr>
<tr>
<td>Solubility (water)</td>
<td>Soluble</td>
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</tr>
<tr>
<td>Solubility in other solvents</td>
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<td></td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>&gt; 370.0 °C / &gt; 698.0 °F</td>
<td>DIN 51794</td>
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<tr>
<td>Decomposition temperature</td>
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<td></td>
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<tr>
<td>Kinematic viscosity</td>
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<td>ASTM D 445-97</td>
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<tr>
<td>Dynamic viscosity</td>
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<td></td>
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<tr>
<td>Density</td>
<td>1.0620 g/cm³ @ 20 °C</td>
<td>ASTM D 1298-99</td>
</tr>
</tbody>
</table>

9.2 Other information

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulk Density</td>
<td>No information available</td>
<td></td>
</tr>
</tbody>
</table>
Explosive properties Not an explosive.
Oxidizing properties The substance or mixture is not classified as oxidizing.
Softening point No information available
Molecular weight 4200
Volatile organic compounds (VOCs) content Not a VOC
Percent Volatile, wt.% No information available

10. STABILITY AND REACTIVITY

10.1 Reactivity
Reactivity No information available.

10.2 Chemical stability
Chemical stability Stable under normal conditions.

10.3 Possibility of hazardous reactions
Possibility of hazardous reactions None under normal use conditions
Hazardous polymerization Hazardous polymerization does not occur.

10.4 Conditions to avoid
Conditions to avoid Avoid heat, sparks and open flame.

10.5 Incompatible materials
Materials to avoid Oxidizing agents. Reducing agents.

10.6 Hazardous decomposition products
Hazardous decomposition products None known.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects
Acute health hazard
Inhalation Very toxic by inhalation. Symptoms may be delayed. Unlikely to be hazardous by inhalation unless present as an AEROSOL.
Eye contact May cause slight irritation.
Skin contact May cause slight irritation.
Ingestion Low toxicity by this route.
Acute toxicity

Oral LD50 > 5,000 mg/kg (rat)
Dermal LD50 > 5000 mg/kg
Inhalation LC50 ~ 0.1 mg/l

Skin corrosion/irritation
Not irritating, rabbits

Serious eye damage/eye irritation
Not irritating, rabbits

Sensitization
Dermal sensitization: non-sensitizing

Germ cell mutagenicity
No information available

Carcinogenicity
No information available

Reproductive toxicity
No information available

Specific target organ toxicity - Single exposure
No information available

Specific target organ toxicity - Repeated exposure
Repeated exposure to aerosols may result in lung damage.

Aspiration hazard
No information available

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Acute aquatic toxicity

Fish LC50 > 100 mg/l
Crustacea No information available
Algae/aquatic plants No information available

12.2 Persistence and degradability

Persistence and degradability
No information available

Biodegradation
Not readily biodegradable

12.3 Bioaccumulative potential

Bioaccumulative potential
The bioaccumulation potential is low.

12.4 Mobility in soil
Mobility
No information available.

12.5 Results of PBT and vPvB assessment

PBT and vPvB assessment
This preparation contains no substance considered to be persistent, bioaccumulating nor toxic (PBT)
This preparation contains no substance considered to be very persistent nor very bioaccumulating (vPvB)

12.6 Other adverse effects

Other information
No other ecological studies have been carried out on this product.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Disposal of wastes
This material and its container must be disposed of as hazardous waste.

Contaminated packaging
Packaging that cannot be cleaned are to be disposed of in the same manner as the product.
Disposal must be made according to official regulations.

14. TRANSPORT INFORMATION

DOT (US) Not regulated
14.1 UN number
14.2 Proper shipping name
14.3 Hazard class
14.4 Packing group
14.5 Environmental hazard
14.6 Special precautions for user

Land transport (ADR/RID) Not regulated
14.1 UN number
14.2 Proper shipping name
14.3 Hazard class
14.4 Packing group
14.5 Environmental hazard
14.6 Special precautions for user

Inland waterway transport (ADN) Not regulated
14.1 UN number
14.2 Proper shipping name
14.3 Hazard class
14.4 Packing group
14.5 Environmental hazard
14.6 Special precautions for user

Air transport (ICAO-TI / IATA-DGR) Not regulated
14.1 UN number
14.2 Proper shipping name
14.3 Hazard class
14.4 Packing group
14.5 Environmental hazard
14.6 Special precautions for user

Sea transport (IMDG) Not regulated
14.1 UN number
14.2 Proper shipping name
14.3 Hazard class
14.4 Packing group
14.5 Environmental hazard
14.6 Special precautions for user

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
   Not applicable

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

   International Inventories

   Australia (AICS)
   All ingredients are on the inventory or exempt from listing

   Canada (DSL)
   All ingredients are on the inventory or exempt from listing

   Canada (NDSL)
   None of the ingredients are on the inventory.

   China (IECSC)
   All ingredients are on the inventory or exempt from listing

   EINECS (European Inventory of Existing Chemical Substances)
   All ingredients are on the inventory or exempt from listing

   ELINCS (European List of Notified Chemical Substances)
   None of the ingredients are on the inventory.

   ENCS (Japan)
   All ingredients are on the inventory or exempt from listing

   South Korea (KECL)
   All ingredients are on the inventory or exempt from listing

   Philippines (PICCS)
   All ingredients are on the inventory or exempt from listing

   TSCA (United States)
   All ingredients are on the inventory or exempt from listing

   Legend
   AICS - Australian Inventory of Chemical Substances
   DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
   IECSC - China Inventory of Existing Chemical Substances
   EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
   ENCS - Japan Existing and New Chemical Substances
   KECL - Korean Existing and Evaluated Chemical Substances
   PICCS - Philippines Inventory of Chemicals and Chemical Substances
   TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

15.2 Chemical Safety Report

   Not applicable.
Full text of H-Statements referred to under sections 2 and 3
H330 - Fatal if inhaled

Key or legend to abbreviations and acronyms used in the safety data sheet
NAV - Not available

This safety data sheet complies with the requirements of: Regulation (EC) No. 1907/2006.

Additional information
GEOlube® is a registered trademark of GEO Specialty Chemicals, Inc.

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.